Chapter XXIV
Invisibility and Visibility: The Shadows of Artificial Intelligence

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ABSTRACT

A vision of future daily life is explored in Ambient Intelligence (AmI). It follows the assumption that information technology should disappear into our environment to bring humans an easy and entertaining life. The mental, physical, and methodical invisibility of artificial intelligent tools and environments will have an effect on the relation between the activities of both, users and designers. The infiltration of reality with sensing, computing, transmitting and acting hardware will cause the construction of new meanings on interaction in general because the “visible” acting of people will be preceded, accompanied and followed by the invisible and visible acting of artificial intelligent tools and environments and their providers. Sociability in such an interaction world stretches between the feelings of “being in security” and “being in control”. Invisibility management could enable situated veiling and unveiling. Critical Transformative Rooms, where human and artificial actors can negotiate about the change of meanings, are the approach to deal with the users’ emotions of frozenness, despair, fear, doubt and trust.

1. INTRODUCTION

Emotionality and sociability are improper qualities to attach to an artificial device. But a human user can fantasize a device as emotional or social, if it mimics accordingly. Users of such devices react with emotions. They “love it”, “be afraid of”, “miss it” etc. They are socially connected to these artificial tools and environments, which are mingled with their live. Interaction through
artificial devices can change a user’s social and emotional relation to the devices themselves and to the human communication partners behind. So infrastructures for e-mail, SMS, mobile-phone, chatting, blogging, and “virtual life”-type games can be regarded as social and emotional agents. Without them a lot of emotionality and social interaction would not be possible.

In the literature it is often assumed, that by “pushing computers into the background, embodied virtuality will make individuals more aware of the people on the other end of their computer links” (Weiser, 1991). It is implied that artificial tools and environments are felt as “more social” if their visibility is reduced to the necessary minimum.

On the other hand total invisible acting implies that concerned humans cannot develop any emotional relation to them: Sensually they do not exist. In this case humans are endangered to become just the objects of artificial intelligent agents. Users will be reduced to observable objects placed in feedback loops that converge to an optimal adaptive and obsessively pre-cautious environment with an action/communication oriented smart space functionality. Users then are not enabled to doubt the artificial intelligent agent’s ready-made acting any more. But doubt and trust are basic emotions for sociability.

In this context the word “visibility” represents everything, humans can, directly or indirectly, perceive with their senses: hearing, seeing, feeling, smelling and tasting. “Invisibility” in the following will be classified into “mental invisibility”, “methodical invisibility” and “physical invisibility”.

“Invisible acting” happens, when users during interaction will not perceive triggers for critical reflecting and developing emotions about the offered ready-made artificial acting. The visibility of artificial actors is limited within the technical constraints of their construction, it can be determined purposefully by designers through the implemented data-models, processing functionality, and the chosen sensors and actors. On the other hand an artificial actor’s invisibility is unlimited.

So the mechanisms of the Invisible and the Visible in artificial environments, the shadows between the artificial and the human intelligence have to be discussed before addressing the question, how it might be made possible that users perceive their artificial environment as social and emotional.

2. BACKGROUND

“This is because proceedings are generally kept secret not only from the public but also from the accused.”
-- Franz Kafka, The Trial

2.1. Ambient Intelligence, the Invisible Intelligence Technology

The term “Ambient Intelligence” (AmI) was firstly used in 1999 by the Vision statement of the European Union’s “Information Society Technologies Program Advisory Group” (ISTAG): “Ambient Intelligence should be the result of the convergence of three key technologies: ‘Ubiquitous Computing’, ‘Ubiquitous Communication’, and ‘Intelligent User-Friendly Interfaces’. AmI is unobtrusive and often invisible, being embedded in everyday objects such as furniture, clothes, vehicles, roads and smart materials. Interaction is relaxing and enjoyable for the citizen, and does not involve a steep learning curve; otherwise stated, the dominant mode of interaction will become laid-back rather than lean-forward. The technology is all around us but almost invisible: it is everywhere and yet in our consciousness is nowhere unless we need it. The resulting landscape is embedded, personalized, adaptive, and anticipatory. People will be surrounded by intelligent and intuitive interfaces recognizing and responding to the presence of individuals. AmI is
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